

CLAIM AMENDMENTS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of the Claims:

1. (Currently Amended) A method of determining rules to be applied to a data packet arriving at a first interface within a data packet router, comprising the steps of:

associating at least two sets of rules with the first interface, at least one of the sets of rules being a shared set of rules also associated with a second interface, wherein Ternary Content Addressable Memory (TCAM) storage space is saved by storing the shared set of rules in a first Access Control List (ACL);

storing a set of rules specific to only the first interface in a second ACL;

determining a key of the data packet;

searching ~~the at least two sets of rules~~ both the first ACL and the second ACL to determine at least one rule matching the key; and

applying an action associated with ~~the at least one~~ the key-matching rule to the data packet.

1 2. (Original) The method of claim 1 wherein the step of associating at least two
2 sets of rules with the first interface includes associating at least one set of rules
3 with the first interface alone.

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1 3. (Original) The method of claim 1 wherein the data packet is an internet
2 protocol (IP) packet, wherein the interface is located within a router, and wherein
3 the step of associating at least two sets of rules with the first interface comprises
4 associating at least two access control lists (ACLs) with the first interface.

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1 4. (Original) The method of claim 3 wherein each rule has an associated action,
2 each associated action being one of packet denial, packet allowance, packet
3 counting, and packet copying.

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1 5. (Original) The method of claim 3 wherein the key is determined from
2 information contained within a header of the IP packet.

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1 6. (Original) The method of claim 5 wherein the information from which the
2 key is determined includes at least one of an IP source address, an IP destination
3 address, a protocol number, a Transmission Control Protocol/User Datagram

4 Protocol (TCP/UDP) source port, a TCP/UDP destination port, and an Internet
5 Control Message Protocol code.

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1 7. (Previously Presented) The method of claim 1 wherein the step of searching
2 the at least two sets of rules comprises the steps of:

3 determining a priority order for the at least two sets of rules; and
4 searching for a rule matching the key in the at least two sets of rules in an
5 order matching the priority order.

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1 8. (Currently Amended) A method of providing security in a data packet router
2 at which a data packet arrives at a first interface, comprising the steps of:

3 associating at least two sets of rules with the first interface, at least one of
4 the sets of rules being a shared set of rules also associated with a second interface,
5 each rule in the at least two sets of rules having an associated action, wherein

6 Ternary Content Addressable Memory (TCAM) storage space is saved by storing the
7 shared set of rules in a first Access Control List (ACL);

8 storing a set of rules specific to only the first interface in a second ACL;

9 determining a key of the data packet;

10 searching the at least two sets of rules both the first ACL and the second
11 ACL for at least one rule matching the key; and

12 | if when at least one rule matching the key is found, applying the action
13 | associated with ~~each of the at least one~~ the key-matching rule to the data packet.

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1 | 9. (Original) The method of claim 8 wherein the step of associating at least two
2 | sets of rules with the first interface includes associating at least one set of rules
3 | with the first interface alone.

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1 | 10. (Original) The method of claim 8 wherein the data packet is an internet
2 | protocol (IP) packet, wherein the interface is located within a router, and wherein
3 | the step of associating at least two sets of rules with the first interface comprises
4 | associating at least two access control lists (ACLs) with the first interface.

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1 | 11. (Original) The method of claim 10 wherein each associated action is one of
2 | packet denial, packet allowance, packet counting, and packet copying.

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1 | 12. (Original) The method of claim 10 wherein the key is determined from
2 | information contained within a header of the IP packet.

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1 | 13. (Original) The method of claim 12 wherein the information from which the
2 | key is determined includes at least one of an IP source address, an IP destination

3 address, a protocol number, a Transmission Control Protocol/User Datagram
4 Protocol (TCP/UDP) source port, a TCP/UDP destination port, and an Internet
5 Control Message Protocol code.

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1 14. (Previously Presented) The method of claim 8 wherein the step of searching
2 the at least two sets of rules comprises the steps of:

3 determining a priority order for the at least two sets of rules; and
4 searching for a rule matching the key in the at least two sets of rules in an
5 order matching the priority order.

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1 15. (Currently Amended) A line card comprising:

2 a first interface;
3 a second interface;
4 a first set of rules ~~associated with at least~~ specific to only the first interface;
5 a second set of rules ~~associated with~~ shared by the first interface and with
6 the second interface; wherein Ternary Content Addressable Memory (TCAM)
7 storage space is saved by storing the second set of rules in a first Access Control
8 List (ACL) and by storing the first set of rules in a second ACL.

9 means for searching both the first ACL and the second ACL ~~the first set of~~
10 ~~rules and the second set of rules~~ to determine at least one rule specific applicable to
11 individual data packets arriving at the first interface; and
12 applying an action associated with the at least one rule to the data packets.

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1 16. (Original) The line card of claim 15 wherein the first set of rules and the
2 second set of rules are Access Control Lists (ACLs).

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1 17. (Original) The line card of claim 15 wherein the first set of rules is associated
2 with only the first interface.

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1 18. (Previously Presented) The line card of claim 17 further comprising:
2 a third interface; and
3 a third set of rules associated with the first interface and with the second
4 interface; and wherein the means for searching for at least one rule specific to
5 individual data packets arriving at the first interface further comprises searching
6 the third set of rules for such a rule.

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1 19. (Original) The line card of claim 15 further comprising

2 means for associating the first set of rules and the second set of rules to the
3 first interface according to a priority order, and

4 wherein the means for searching for a rule comprises searching the first set
5 of rules and the second set of rules in the order specified by the priority order.

1 20. (Original) A packet switch comprising the line card of claim 15.

1 21. (Currently Amended) A computer-readable medium including instructions
2 for providing security in a data packet router at which a data packet arrives at a
3 first interface, comprising:

4 instructions for associating at least two sets of rules with the first interface,
5 at least one of the sets of rules being a shared set of rules also associated with a
6 second interface, each rule in the at least two sets of rules having an associated
7 action, wherein Ternary Content Addressable Memory (TCAM) storage space is
8 saved by storing the shared set of rules in a first Access Control List (ACL) and by
9 storing a set of rules specific to the first interface in a second ACL;

10 instructions for determining a key of the data packet;

11 instructions for searching ~~the at least two sets of rules~~ both the first ACL and
12 the second ACL for at least one rule matching the key; and

instructions for applying the action associated with each of the at least one
rule to the data packet, ~~in the event that~~ when at least one rule matching the key is
found.